

KF	Law Archives
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.W342	Master plan for building
I88	expansion : Mudd Law
1983	Building, Washington
	University, St. Louis,
	Missouri.

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PREFACE

The School of Law at Washington University has an excellent academic program that attracts top students and faculty members from across the nation. At present, the physical facilities at Mudd Hall do not adequately reflect and reinforce that standard of excellence. Mudd Hall's problems at present fall into three broad categories:

1. Inadequate space
2. Functional problems within the existing building
3. Aesthetic deficiencies.

The primary aim of the Master Plan study was to determine how best to accommodate the additional space needs of the Law School. The secondary purpose was to examine the very serious functional and aesthetic problems of the existing complex and recommend solutions.

The Architects' approach to the problem was to look at the overall complex, learn all its problems as well as its potentials and recommend an integrated scheme that solves space needs as it solves functional and aesthetic needs. Several options were examined and judged in concert with representatives of the Law School and the University. The chosen approach, presented in this document, will allow Mudd Hall to match the excellence of the program it houses.

I. THE PROBLEM

A. Inadequate space

Continuing accreditation of the Law School is threatened due to severe deficiencies in quality space for many functions. Space limitations in the library have left carrel space far below the required accommodations for 2/3 of enrollment. Acquisition of new volumes is threatened due to lack of space. Electronic research facilities are currently housed in makeshift space. Quality classroom space, as well as faculty office space, is inadequate. Administrative functions are housed in space that lacks even a reception area.

A Building Program for the expansion of Mudd Hall in order to solve space needs was developed by Law School Faculty and Administration members and was refined during the course of the Master Plan process.

In the course of developing schemes for the additions and renovations to Mudd Hall, it was determined that various Program areas could be developed within existing space. Therefore, the 20,103 square feet of net programmed area was ultimately accommodated in building additions totalling 27,719 square feet, gross.

1. Program of Space Requirements

<u>DESCRIPTION</u>	<u>NET AREA</u>
a. Compact Library Shelving Area A designated portion of this area will be devoted to compact shelving, with additional area adjacent for reading areas and desk.	5000 S.F.
b. Additional Carrel Space 150 additional carrels are provided for, at an average allowance of 20 square feet per carrel. A substantial portion of these carrels are to be in designated enclosed smoking lounges within the library space.	3000 S.F.
c. Alumni-Faculty Lounge A room convenient to the library and most faculty offices and adjacent to the Rare Books Room.	1200 S.F.
d. Staff Lounge Additional Space Current Staff lounge area is inadequate. 400 S.F. lounge is required, with sink, refrigerator and oven.	200 S.F.
e. 80 Person Classroom Provide for easy dialogue and visual contact between the professor and each student.	1600 S.F.
f. 25 Person Seminar Room	625 S.F.

- g. 7 Additional Faculty Offices 1260 S.F.
Offices are required for present and expected increase in faculty, as well as the possible assignment of space to professors emeriti or to temporary visiting faculty. 180 square feet each.
- h. Rare Books Room 730 S.F.
Shelving for 5000 volumes plus some study space. Additional reading space to be available in adjacent Faculty-Alumni Lounge. Strict climate control required.
- i. Audio-visual and Electronic Information Center 1320 S.F.
Located in the library, this area will centralize these functions, providing space to teach, store and refer to audio-visual and electronic information systems.
- j. Circulation Desk Typing Area 160 S.F.
A space is needed to confine the noisy activities, such as typing, associated with work in the Circulation Desk area.
- k. Library Conference Room 200 S.F.
A shared conference room for administrative and other needs within the library.
- l. Serials Librarian Office 180 S.F.
An office adjacent to, but separated from the general library work area is required for the Serials Librarian.
- m. Audio-Visual/Systems Librarian Office 180 S.F.
An office for a Librarian to monitor and direct Audio-Visual and Electronic Information Systems activities in the library.
- n. Additional Flexible Work Area-Library 500 S.F.
Work area is severely cramped and divided in the present Library Services area. Additional, flexible space is required for these functions.
- o. Administration Area - Reception/Waiting Room 200 S.F.
- p. Administration Area - Central File Room 120 S.F.
- q. Flexible Conference/Seminar/Workroom Space 700 S.F.
Area adjacent to Administrative Offices to be shared by students, faculty and Administration for various scheduled and unscheduled activities.
- r. Admissions/Placement - Additional Workroom Space 150 S.F.

s.	Admissions/Placement - Small Conference Room	150 S.F.
t.	Admissions/Placement - Secretarial & Waiting Space	200 S.F.
u.	Admissions/Placement - 2 Additional Small Interview Rooms	128 S.F.
v.	Additional Elevator 100 S.F. x 4 floors, double entry	400 S.F.
w.	Additional Restrooms Additional restrooms are needed to make up for present deficiencies and to accommodate the additional built space.	1150 S.F.
x.	New North Entry New Entry and vestibule area for visitors arriving from the North parking lots.	500 S.F.
y.	New Main Entry & Vestibule Provide a new major entry to the Law School more appropriate and identifiable than the current, rather obscure entry.	450 S.F.
z.	Relocate Service Center This area combines copy services, mailing and receiving. It should be accessible to the north service entry and not directly in Library space. Relocation of present 400 S.F.	no additional space
aa.	Relocate Student Activities Offices Relocate as required by rearrangement of spaces within the building. Should be near classroom space.	no additional space
SUBTOTAL		20,103 S.F.
bb.	Mechanical, Custodial & Circulation Space	as required

B. Functional problems

It was found that functional problems within the existing building are numerous and their effects range from nuisance to serious hampering of activities.

1. Organization of space is poor. For example, Faculty offices are within the library, creating security and noise problems for the library. Other faculty offices are grouped in a wing of the building, but the only effective access to the space is through the library. Administrative offices and a makeshift reception area are distant from the main entry to the building.
2. Circulation through the building is difficult. The building has many levels, but corridors do not follow similar patterns floor to floor. There are many intervening sets of stairs. Elevator access is restricted, since elevators pass through secure areas of the library. There is no clear identification of public access areas versus restricted areas. The main stair to the library is small and poorly identified.

3. Large classroom spaces do not function well. They are steeply-raked and one-directional, versus the preferred gently - raked, U-shaped law classroom.
4. Acoustics are poor. Many areas in the building, especially the library and the classrooms, suffer from poor acoustics.
5. Heating and cooling of spaces is erratic. The building was constructed with very little insulation and with a mechanical system that is very inefficient by today's standards. The system was also installed such that access to some components for maintenance is almost impossible. The combination of these factors has produced erratic and energy-wasting performance.

C. Aesthetics

Mudd Hall has the appearance of being "unfinished", both in the interior and on the exterior. The virtually unrelieved use of rough concrete as a finish material, combined with often inadequate lighting levels, has produced an ambience that is gloomy in many areas of the building. The exterior has a raw character that contrasts unfavorably with the refined appearance of most neighboring buildings on campus.

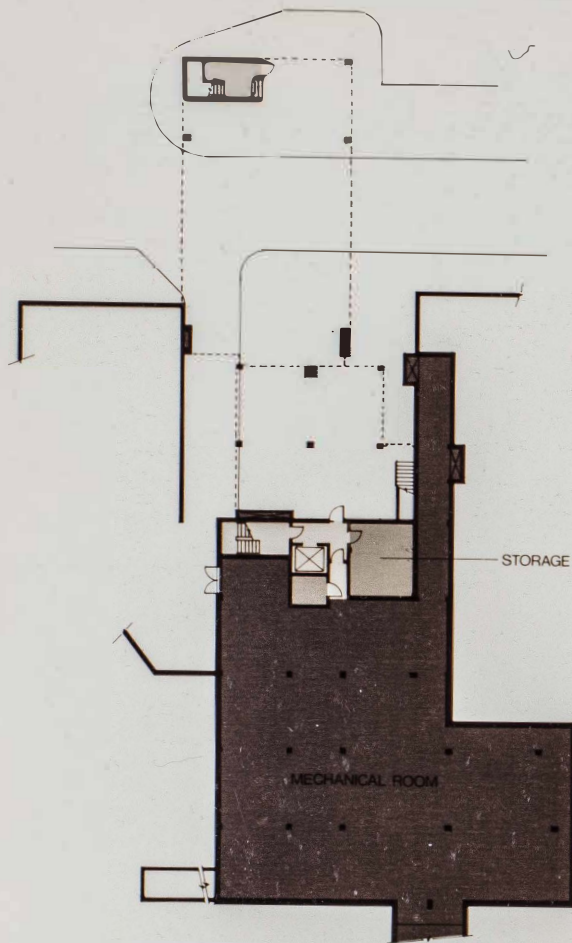
In addition to the extensive use of unfinished concrete, a lack of ceilings, exposed mechanical systems and primary color schemes prevalent in the building detract from the sense of professional decorum and responsibility that is desirable in the law school.

In interviews with Law School personnel, the opinion was frequently expressed that the unsatisfactory aesthetics of the building have had a negative effect upon the promotion of the law school program and that morale of Administrative staff, faculty members and students has been negatively affected by the buildings' shortcomings.

D. Graphic Analysis of Existing Plan

The existing building was analyzed in terms of its layout of spaces and its structural and mechanical systems. The purpose of this was to discover the problems as well as potential of the existing building, as well as to identify the best locations for additional built space.

The color keyed plates which follow show where each functional area is located within the building. Following these plates is a photograph of a scale model of the existing building. These exhibits are included for purposes of comparison to indicate the basic building form and distribution of spaces which will be modified by the additions and renovations of the Master Plan proposal.



Lower level

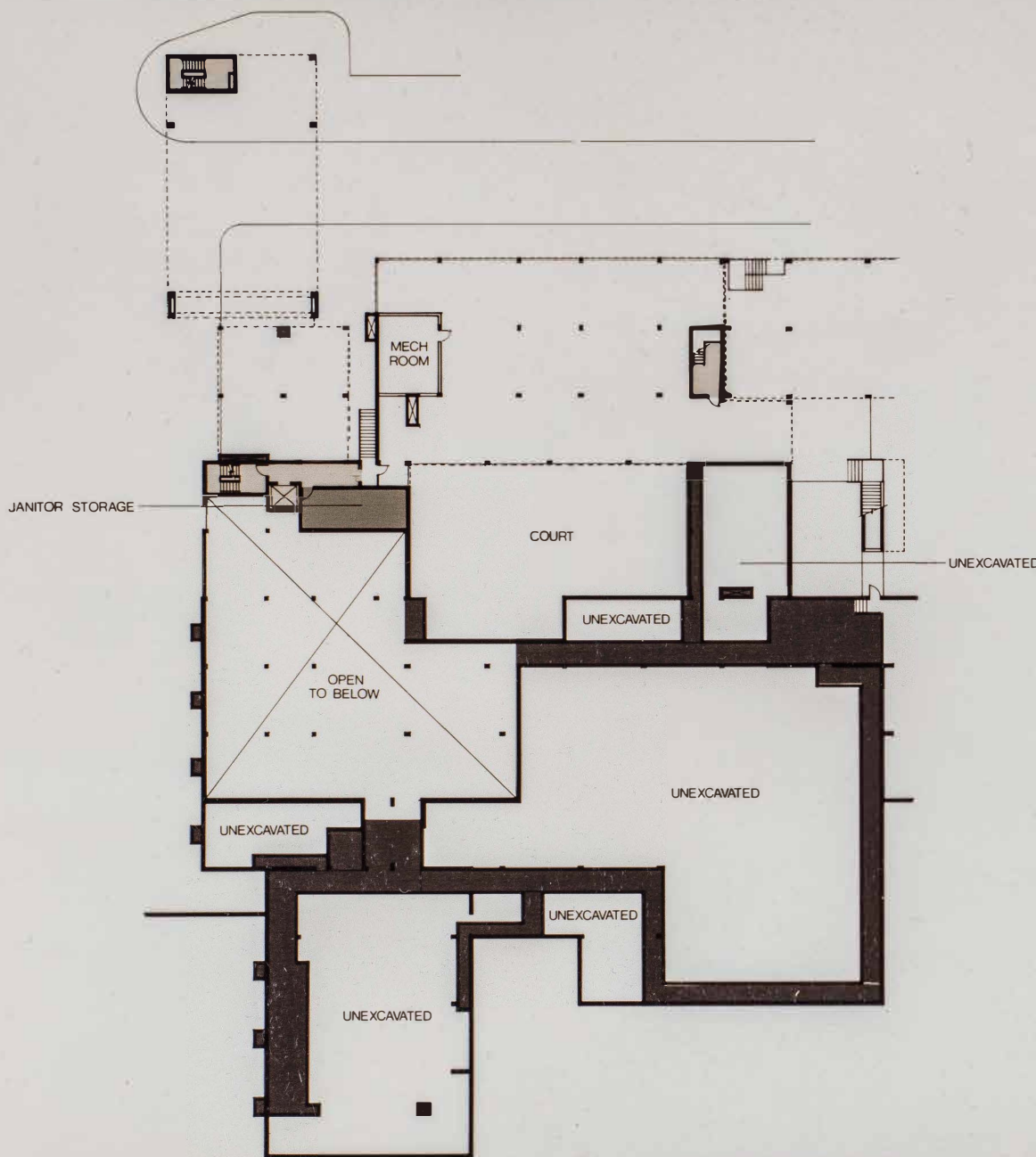
COLOR KEY

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	CIRCULATION
	LOUNGES
	LIBRARY
	LIBRARY SUPPORT
	CLASSROOM
	STUDENT ACTIVITIES
	ADMINISTRATIVE
	STUDENT SERVICES
	FACULTY OFFICES



1st Level Plan (Service) Existing





ground floor

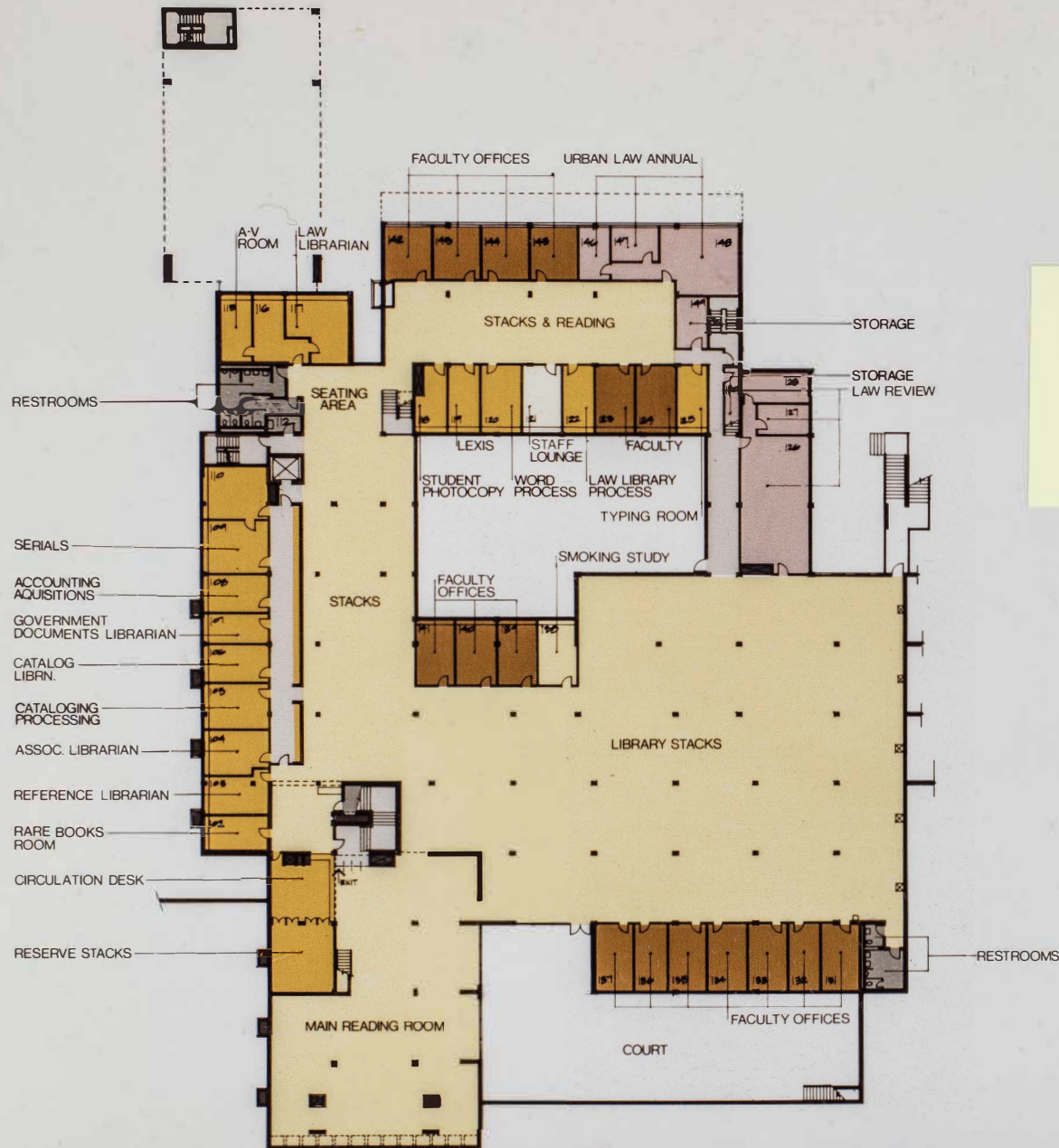
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- LIBRARY
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2nd Level Plan (Service) Existing

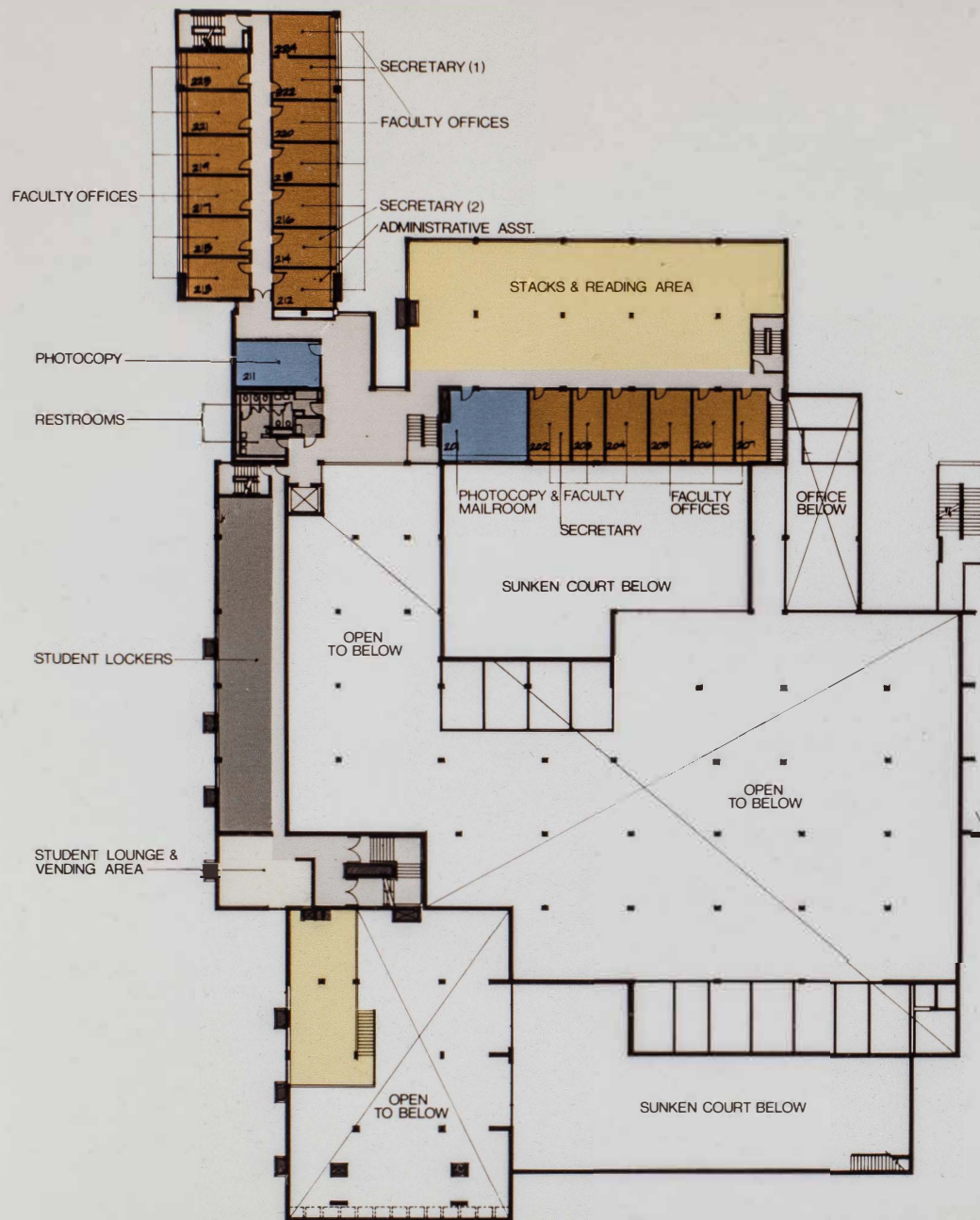




COLOR KEY

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	CIRCULATION
	LOUNGES
	LIBRARY
	LIBRARY SUPPORT
	CLASSROOM
	STUDENT ACTIVITIES
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1st floor



2nd floor

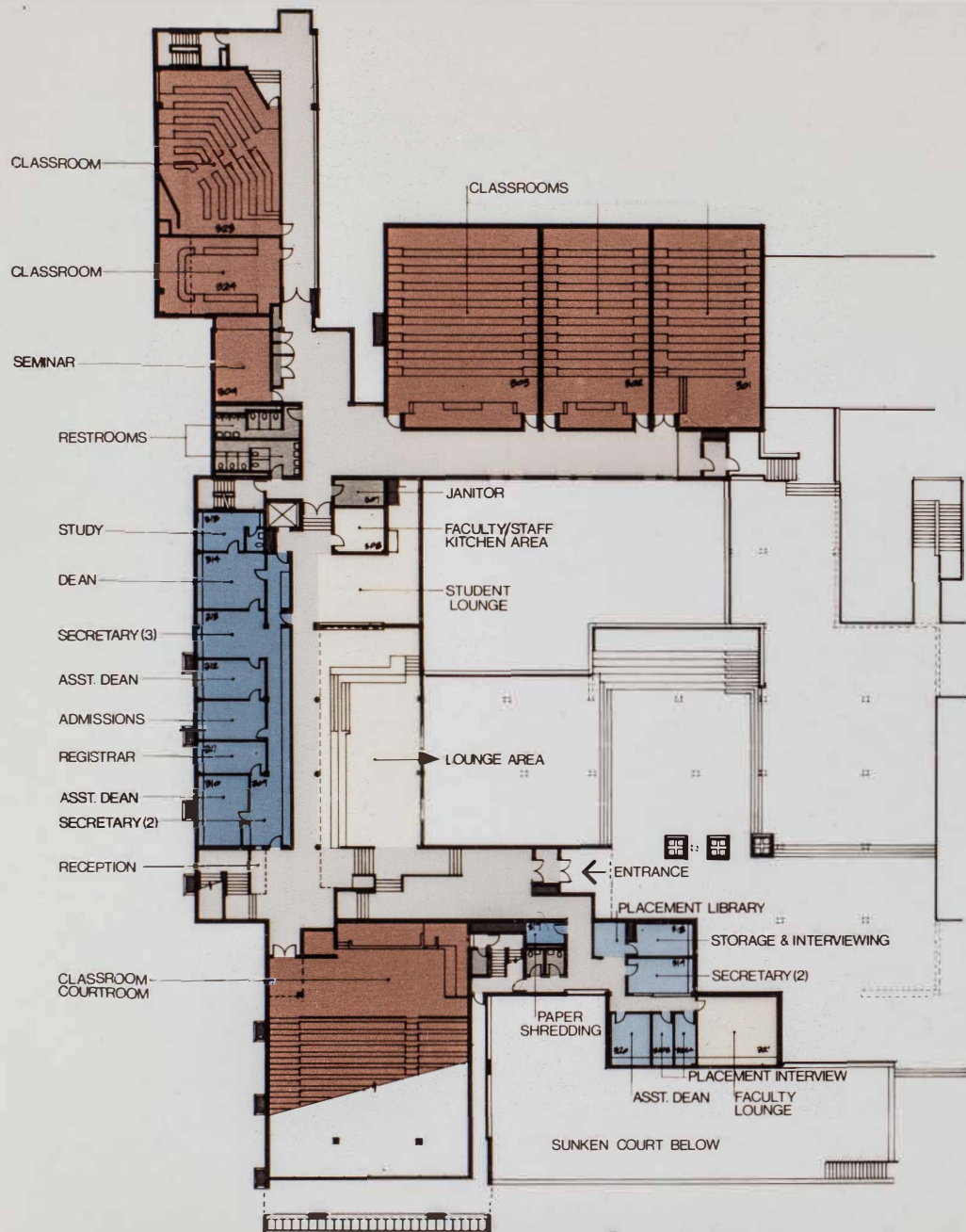
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- LOUNGES
- LIBRARY
- LIBRARY SUPPORT
- CLASSROOM
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4th Level Plan (Mezzanine) Existing





3rd floor

COLOR KEY

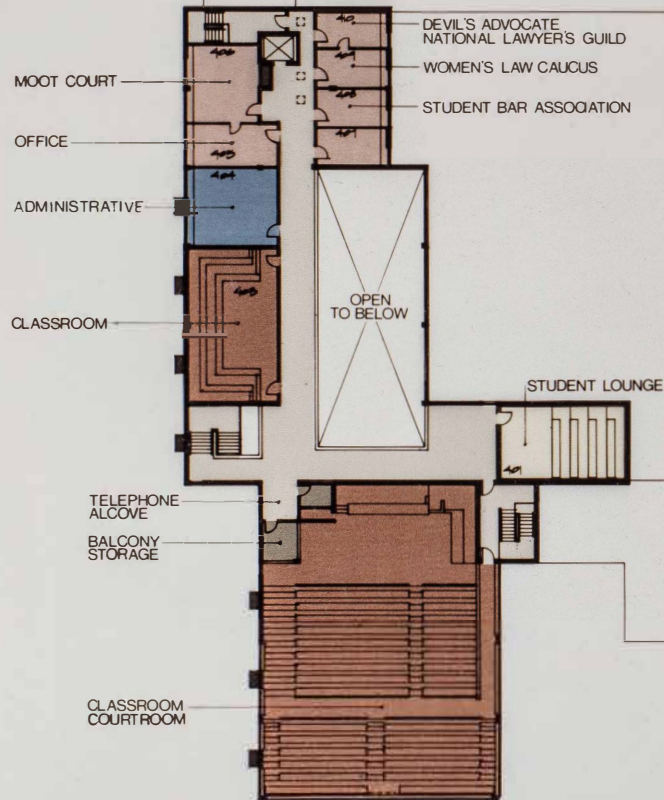
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	CLASSROOM
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	ADMINISTRATIVE
	STUDENT SERVICES
	FACULTY OFFICES



5th Level Plan (Main Floor) Existing



4th floor



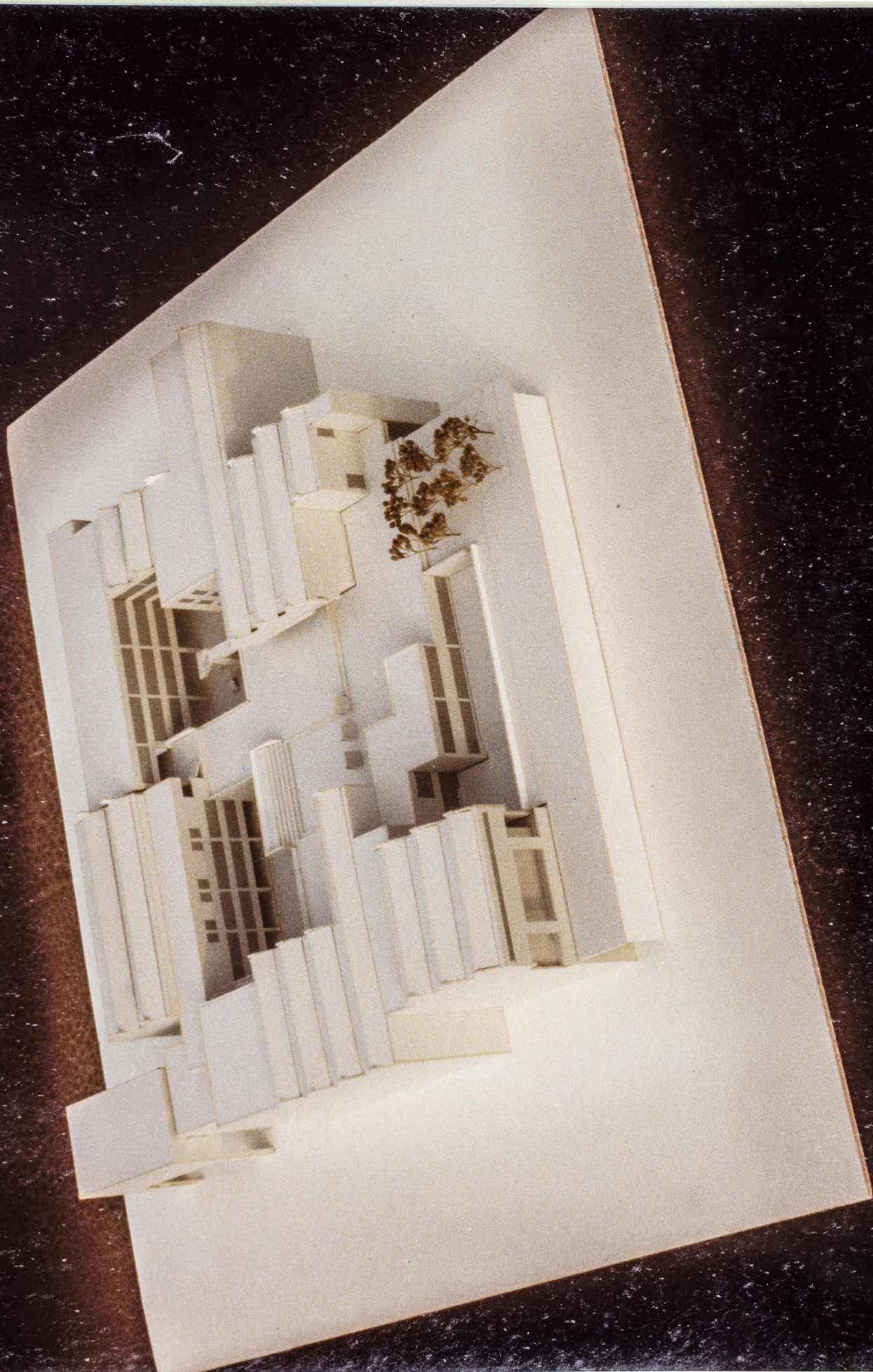
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	LOUNGES
	LIBRARY
	LIBRARY SUPPORT
	CLASSROOM
	STUDENT ACTIVITIES
	ADMINISTRATIVE
	STUDENT SERVICES
	FACULTY OFFICES



6th Level Plan (Mezzanine) Existing





II. THE SOLUTION

Following identification of the problems to be addressed, the Architect developed alternative plans for building expansion, renovation and reorganization that focused on solving these problems.

A. Options for Expansion

The Program of Space Requirements delineated the need for 25,000 to 30,000 gross square feet of new space. The basic options for developing this much new space contiguous with the existing building were as follows:

1) Expand to the north, over the existing major driveway. 2) Expand to the south into the major green space running from Olin Library to the Physical Education complex. 3) Build additional space within the "U" formed by Mudd Hall and Elliot Hall. There was not considered to be a valid option to build to the west, primarily because of the nearness of Fraternity Row.

After preliminary investigation, it was decided that the option of building to the south was functionally as well as aesthetically inappropriate. Therefore, two options were explored in detail.

It should be noted that both schemes propose extensive reorganization to properly integrate the new space, as well as to solve problems that were made apparent through the interviews and preliminary analysis of the existing building.

1. Schemes A and B

Scheme A provides for the expansion of the building into the existing north open courtyard on the two library levels, and into the existing concrete paved pedestrian courtyard as well at the main entry level, where administrative and classroom space is concentrated.

Scheme B provides for expansion of the building primarily to the north, over the existing major driveway.

In both schemes, new space is also built under the existing north faculty wing, as well as under the existing northernmost library space.

Plates illustrating Schemes A & B are included in the Appendix to the Master Plan.

2. Evaluations of Schemes

Each of the Schemes was evaluated on its success in addressing issues that had been identified in the interview and programming stages as important. The results of this evaluation, as well as consideration by the Building Expansion Committee and representatives of the Office of Physical Facilities, indicated Scheme A as the preferred solution.

The specific issues on which the Schemes were judged, along with the scores that they were assigned, are shown on the following plate.

EVALUATION

SCHEMES

ISSUES

A	B	Major issues addressed by each scheme
3	2	Locate additions in proximity to existing functions
3	2	Provide pleasant identifiable public entry
2	2	Make building accessible to handicapped
3	2	Simplify internal circulation
3	2	Locate administration near entry
3	2	Improve visual image of the complex
3	2	Allow for future expansion
2	2	Allow future restructuring of space
3	2	Allow phasing of construction
2	3	Minimize disruption of operations during construction
3	2	Improve library entry
3	3	Improve library environment
3	2	Increase library security
2	2	Improve north entry to law school
3	2	Improve exterior environment
3	2	Create interior space that is functional and pleasant
3	2	Improve energy performance of building
3	2	Relative cost of construction
50	38	

Key:

- 3. Above average success in handling the issue
- 2. Average success
- 1. Below average

B. FINAL EXPANSION PLAN

1. Description of the Plan

Following selection of Scheme A as the option for further development, a period of time was spent by Law School representatives and the Architect reviewing and refining the Scheme. Modifications were proposed and have been incorporated into a final Expansion Plan that best suits the needs of the Law School. A description of the proposed plan follows.

Level 1 - A new north entry for visitors and a new elevator are built.

Level 2 - The existing north courtyard is filled in to a line 10' north of the south wall of the courtyard (to avoid footing problems identified in the structural analysis). The open space beneath the existing 3rd level overhang is infilled. The resultant combined space is utilized for library compact shelving, the Government Documents department, a mail room with direct access to the new elevator and an enlarged mechanical room.

Level 3

The library is extended at this level by building in the north courtyard above the compact shelving level below. The north courtyard becomes a large lightwell capped by a series of skylights. A new, grand library entry stair extends up through the lightwell to the main entry level floors above. All library service space is relocated to the area north and east of the new lightwell, adjacent to the new entry stair and the new elevator. Faculty offices are relocated from the interior of the library space to a new north faculty wing, to the area vacated by library services, and to area vacated by Law Review. This accomplishes four goals: 1) Access to light and view are greatly improved for library users. 2) Circulation for non-library functions is separated from library circulation, improving freedom of movement outside the library and improving security and quiet within the library. 3) Faculty offices are less spread out, improving collegiality, while retaining easy access to library space through keyed doors. 4) Flexibility within the library is improved.

The new elevator is double-entry at this level for the convenience of faculty members and library staff.

Finally, two new additions are made to this library level, infilling small portions of the existing south courtyard. The easternmost of these two spaces serves the additional purpose of expanding the entry to the plaza above.

Level 4

Library services offices and faculty offices are removed from the north library mezzanine level, allowing this space access to the view into the new lightwell. A new staff lounge is built at this level, and a mezzanine deck is added in the main Reading Room. The new double-entry elevator extends to this level.

Level 5

Approximately 10,000 square feet of new space is built within the "U" formed by Mudd Hall and Elliot Hall.

This area contains a new main entry facing the entrance to the plaza, administrative space between the new entry and the old entry, flexible conference/seminar/workroom space west of the administrative area, and informal lounge, circulation and handicapped ramp space around the lightwell.

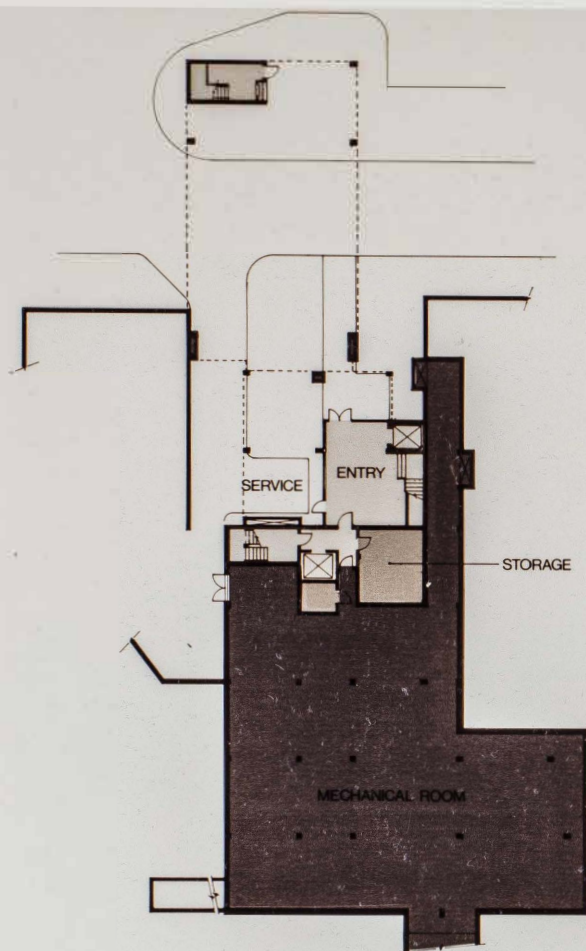
Area directly east of the three large classrooms is developed as student activities offices. Law Review and Urban Law Annual, displaced from the library to attain the required space for that function, are relocated to the old Administrative office space. Here, these activities are proximate to the student lounge, classrooms and the main entry, as well as convenient to faculty and library areas.

The lightly used, small seminar room 304 is converted to restrooms. A 590 square foot addition adjacent to the present Placement office allows Placement and Admissions to be consolidated in one area, with increased space for both functions. The large Moot Courtroom is subdivided, creating a radially-planned, 160 seat auditorium with complete audio-visual capabilities at Level 5 and a new, radially-planned 80 seat classroom at Level 6.

Level 6

Besides the previously mentioned new 80 seat classroom at this level, a new 25 seat seminar room is created by combining Rooms 404 and 405. Room 406 is converted to restrooms on this floor which previously had none.

The following pages contain color keyed plates describing the final Expansion Plan in detail.



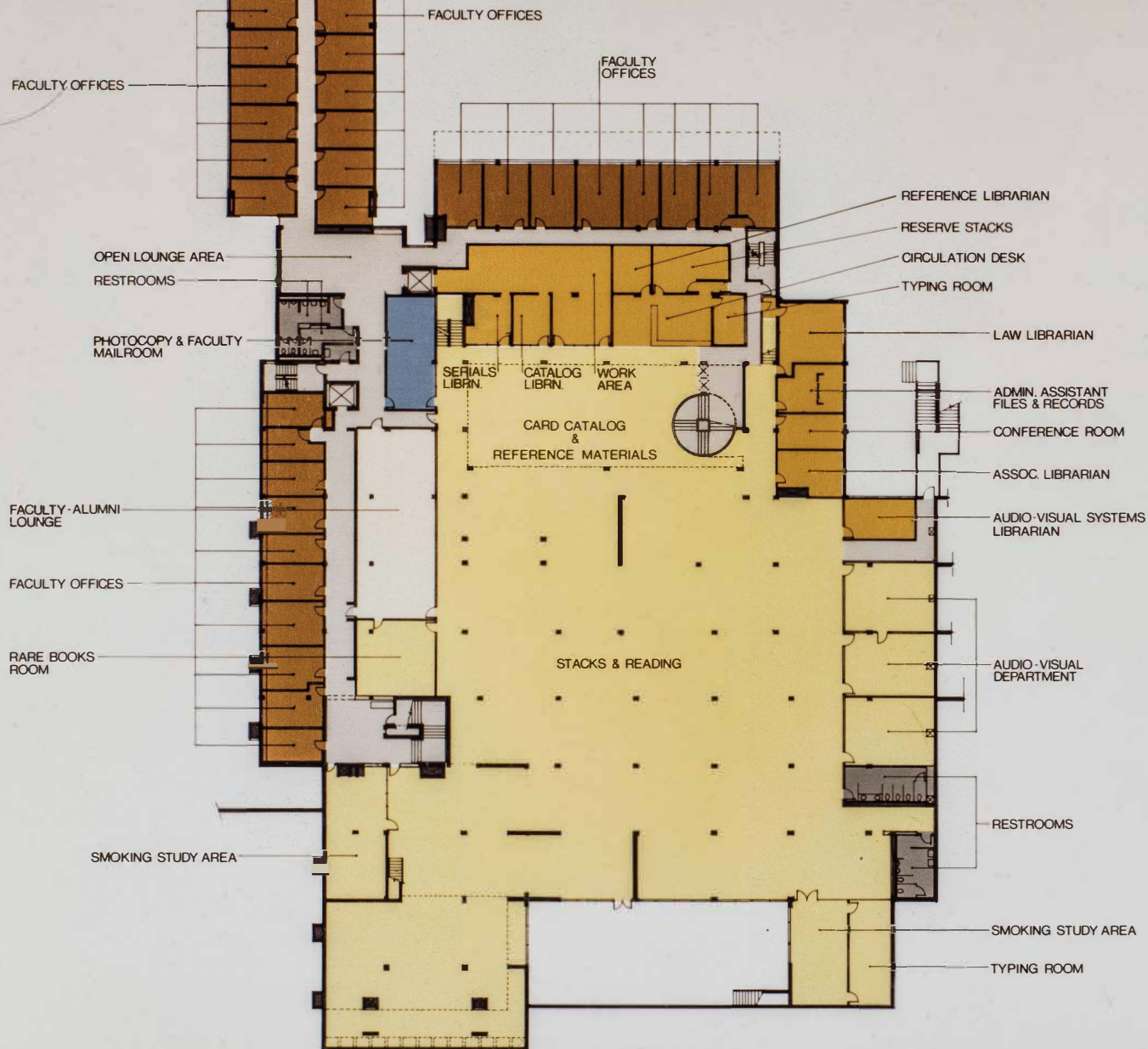
COLOR KEY

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	CIRCULATION
	LOUNGES
	LIBRARY
	LIBRARY SUPPORT
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	STUDENT ACTIVITIES
	ADMINISTRATIVE
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1st Level Plan (Service) Proposed



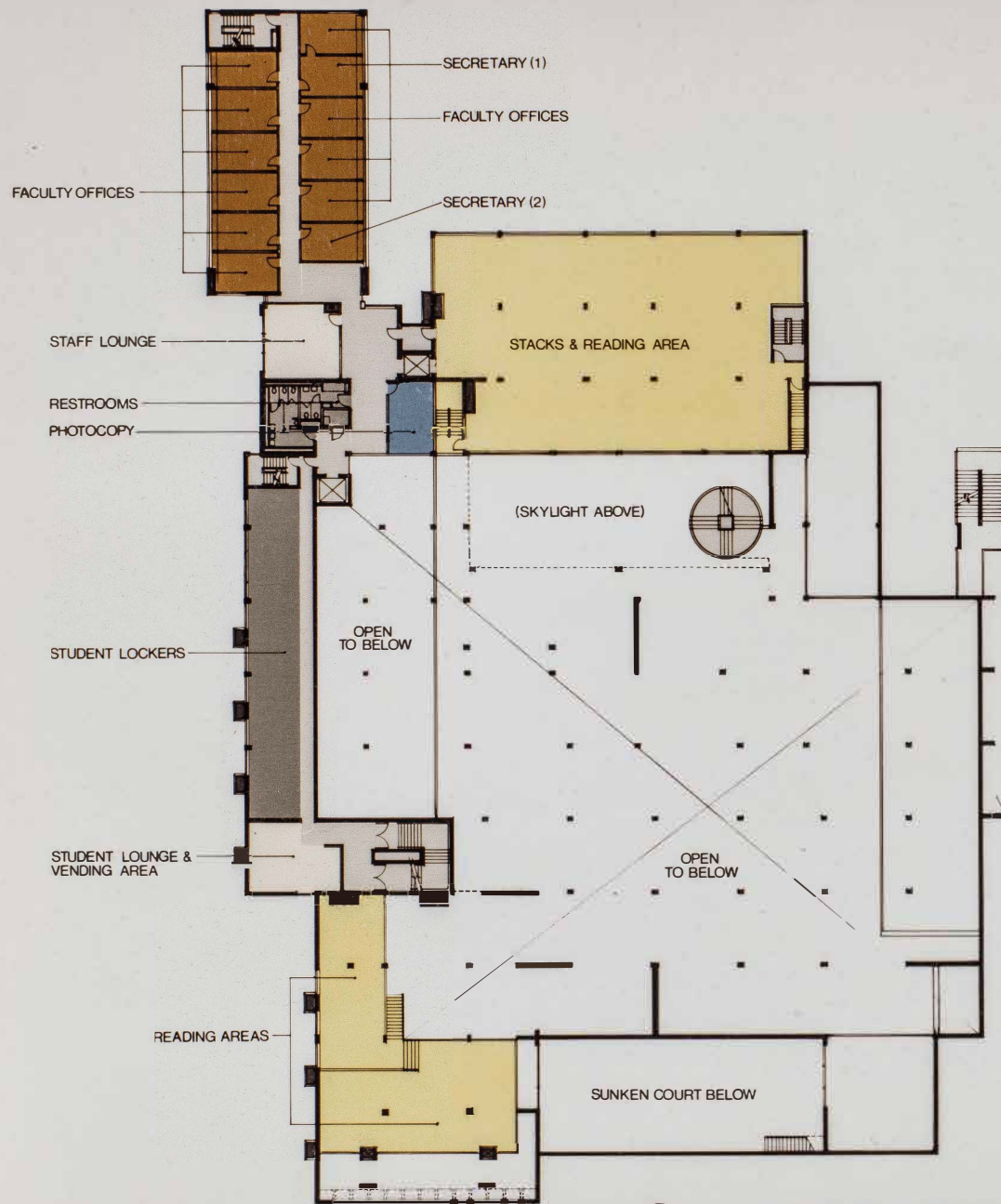


3rd Level Plan (Library) Proposed

0 10 20

COLOR KEY

	MECHANICAL
	RESTROOMS & LOCKERS
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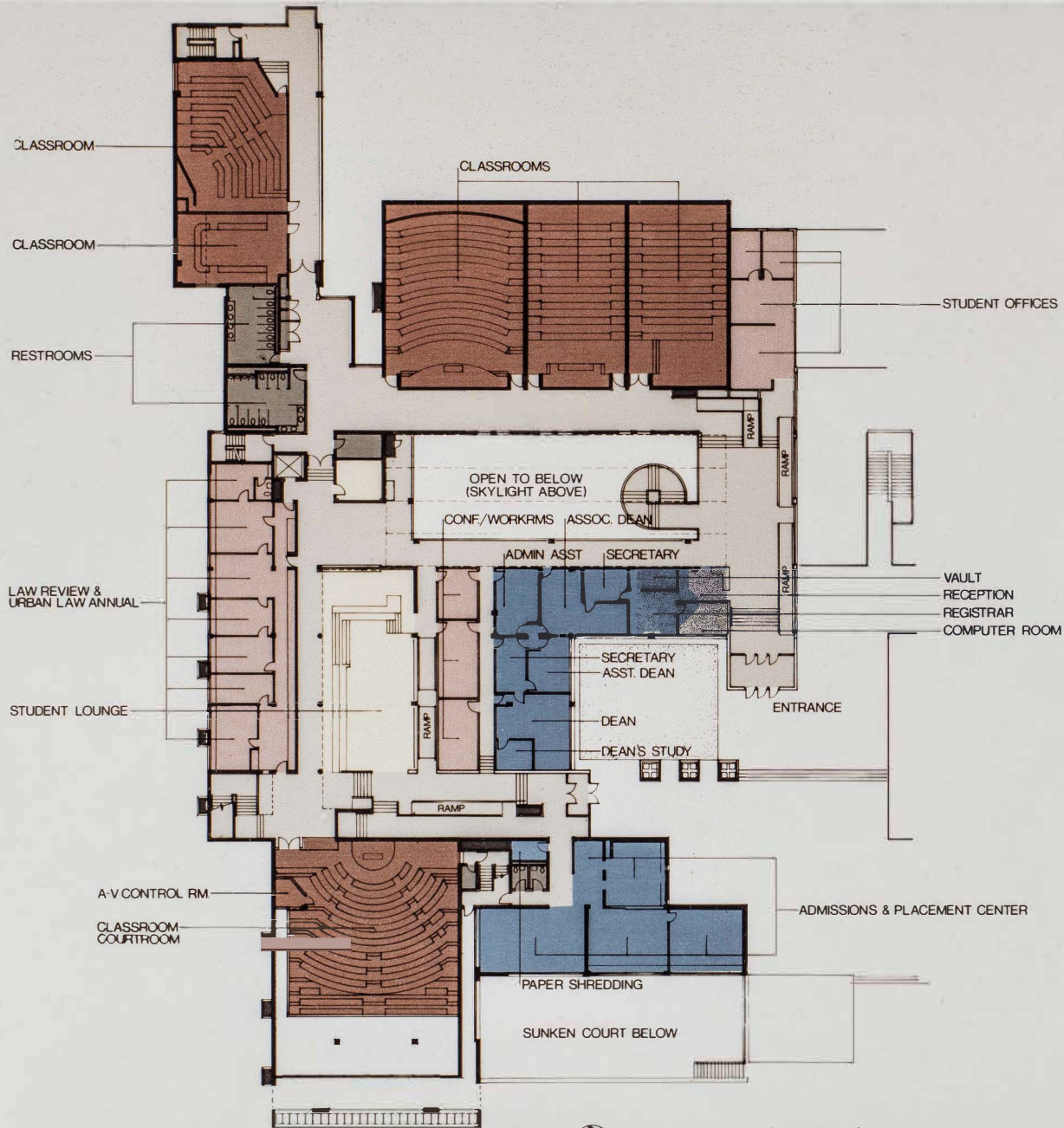
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4th Level Plan (Mezzanine) Proposed





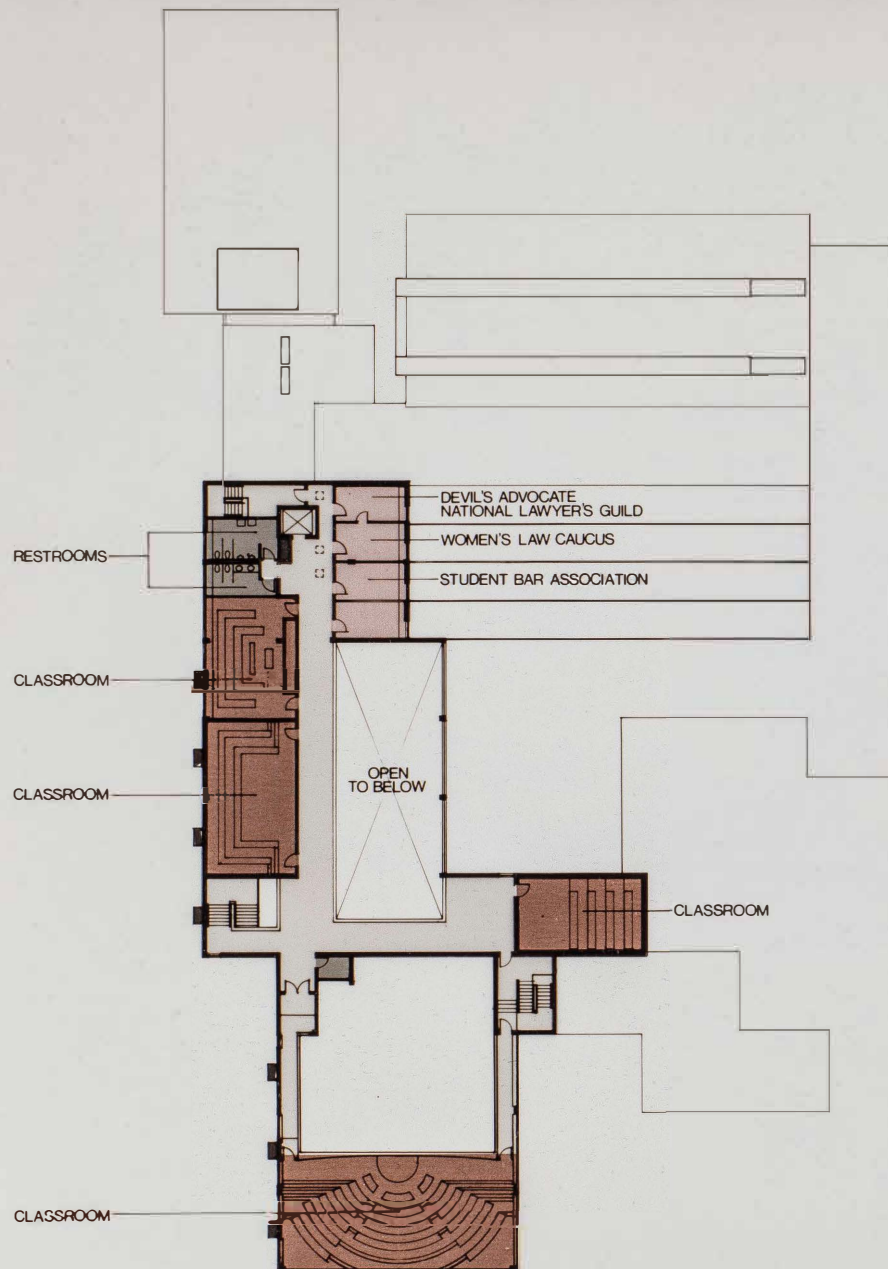
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5th Level Plan (Main Floor) Proposed





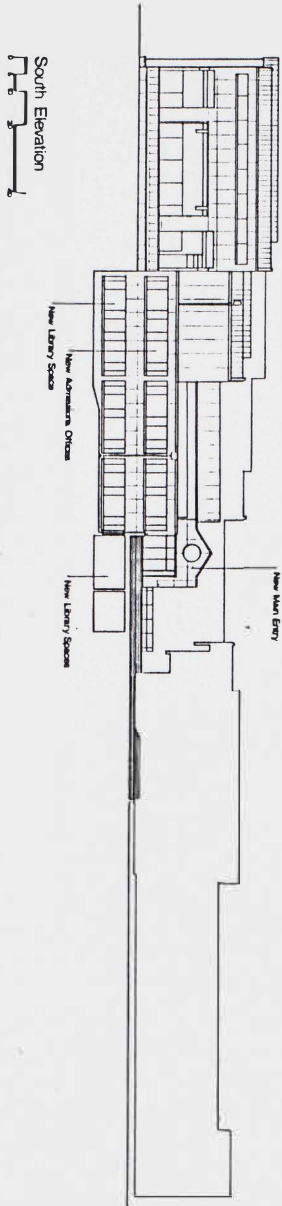
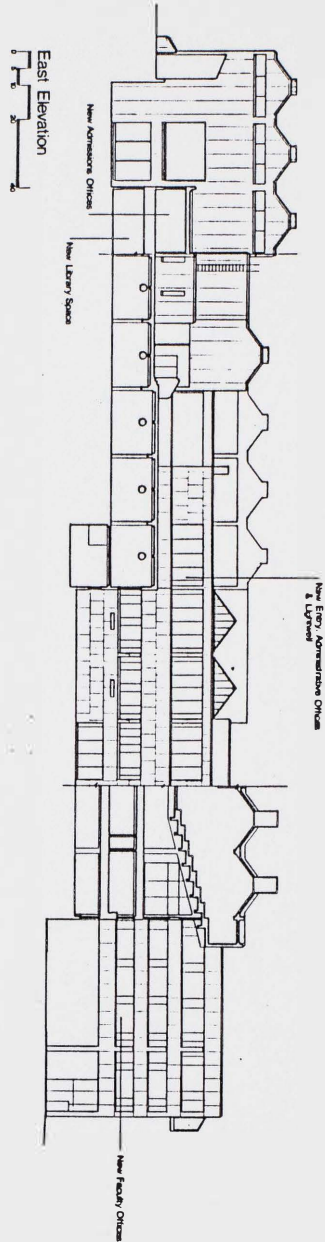
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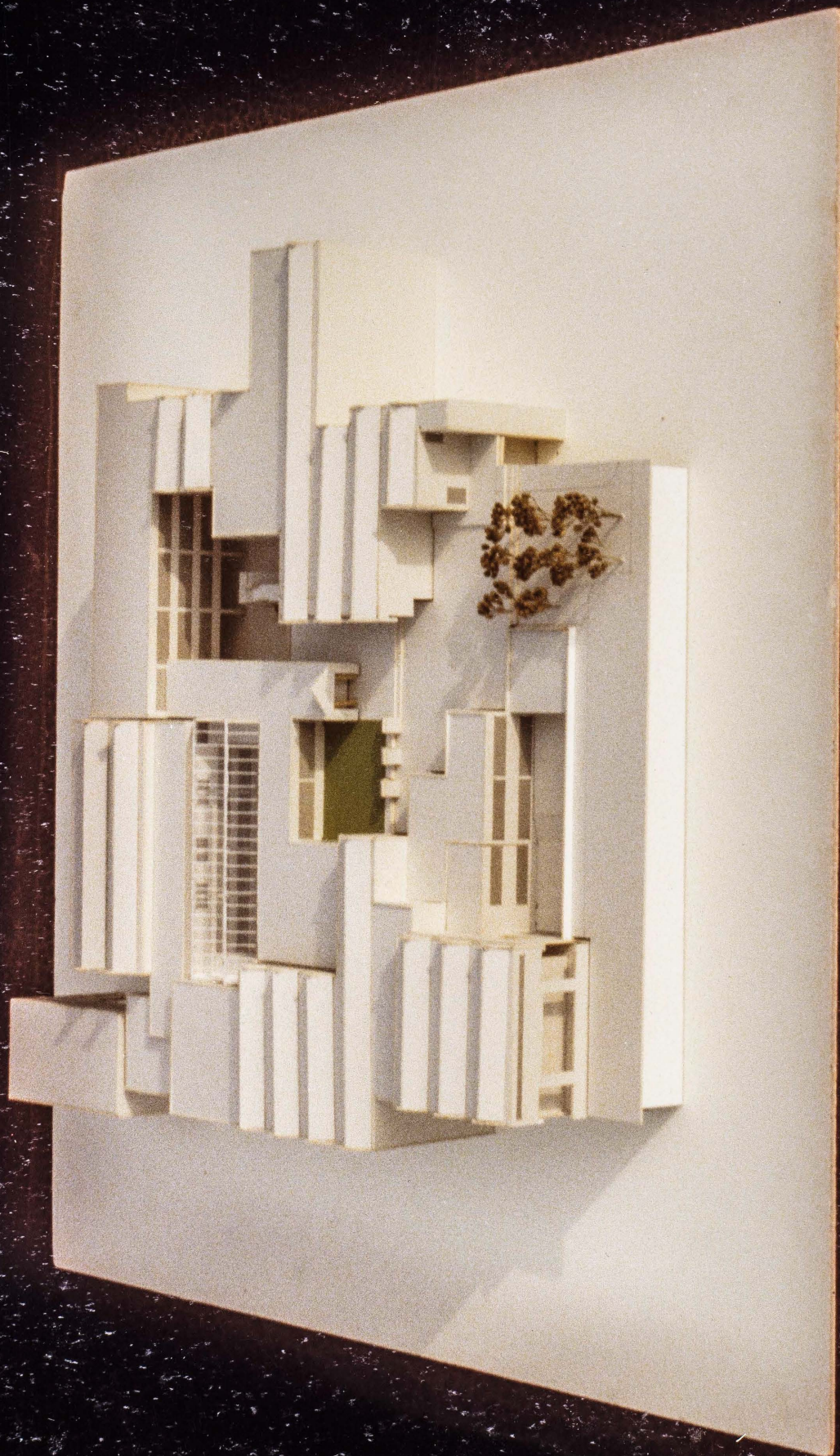
6th Level Plan (Mezzanine) Proposed

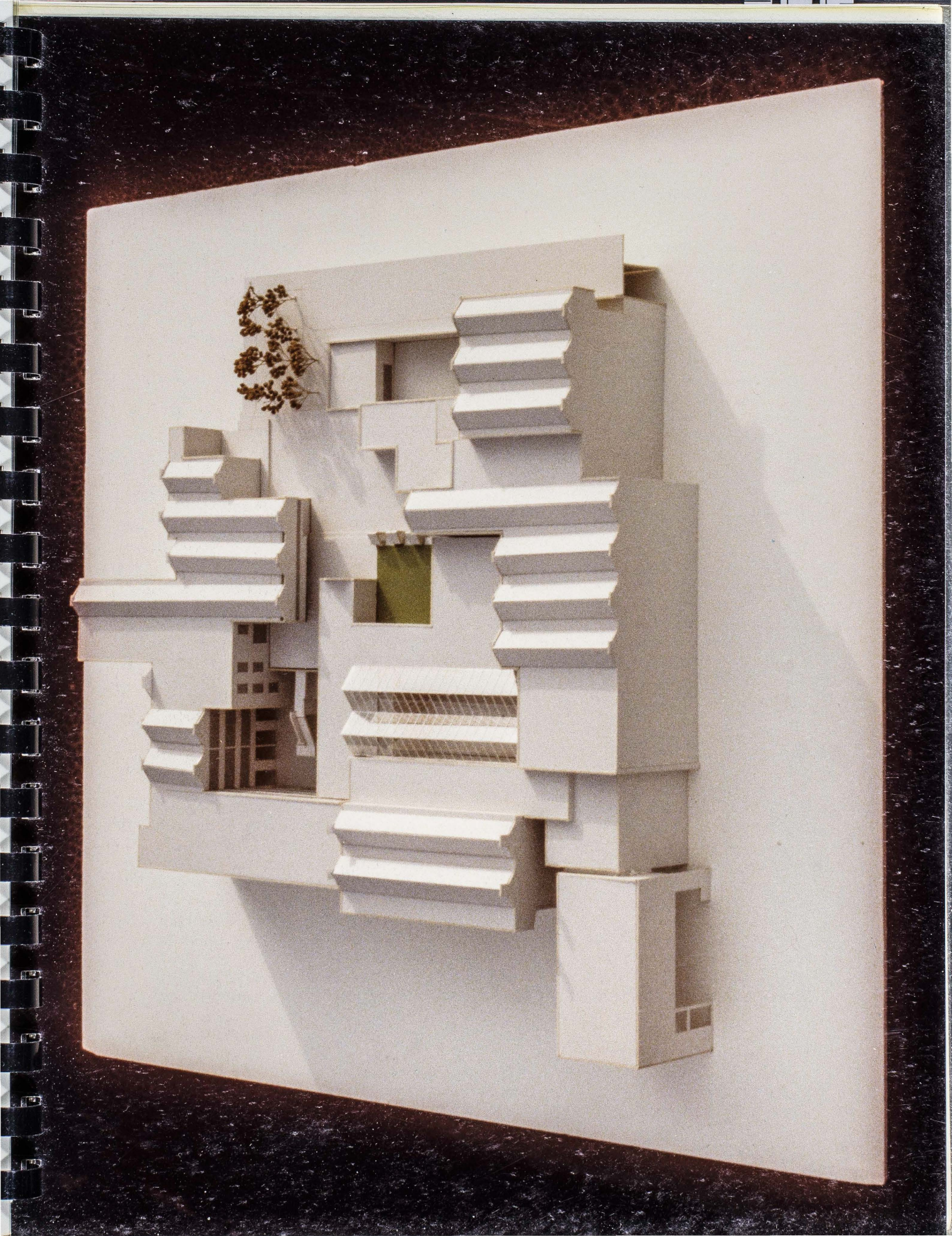




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MUDD HALL EXPANSION PROGRAM
Washington University in St. Louis





2. Interior Remodelling

In addition to developing the physical form of the new addition, the Architects were asked to make recommendations for improving the "unfinished" appearance of the existing Mudd Hall through revised interior finishes. Specific recommendations are described in the following paragraphs.

a. Three large classrooms.

Installation of stepped, acoustical ceilings would decrease the overwhelming volume of these rooms creating a more comfortable scale while decreasing the amount of heating and cooling energy required. Acoustics would also be improved. These ceilings could be of acoustical tile with plaster bulkheads, or of wood strips, with insulation above. Uniform, dimmable fluorescent lighting should be integrated into the ceiling design. New carpet in a warm color should be installed over the entire floor plane. Acoustical panels, either of fabric or of wood strips with insulation behind, should be installed on the north, east and west walls to eliminate excess reverberation. In the 120 seat classroom, risers should be reworked to a gentle curve and new, curved desk tops installed to improve eye contact among the teachers and students. Along with the remodelling, audio-visual equipment or at least the necessary wiring for future hookup should be installed.

b. Main corridors

The rough concrete corridor walls would be covered with drywall and vinyl wall covering, with a high oak base. A concealed spline, acoustical tile ceiling and warm colored carpet would be installed to tone down noise in the halls. An asymmetrical light pattern, possibly consisting of a continuous, recessed light cove at one side of the hall augmented by recessed 2 x 2 fluorescents at classroom entries would add interest to corridor areas.

c) Library stacks and reading areas

Within the core stack areas, exposed utilities, concrete structure and all the ceiling cavity above the 9'-0" level would be painted with a "blackout" paint. A regular grid of fluorescent lights in rectangular metal enclosures hung at 9'-0" level would create an implied ceiling plane at a comfortable height while improving energy efficiency and providing uniform lighting. At the perimeter of the stack area, an acoustical ceiling of mineral board tile, metal strips or wood strips with insulation above should be installed to improve acoustics. Rough concrete walls throughout the library should be covered with drywall painted in light colors to reflect natural light as deep as possible into the library reading areas. Insulation would be installed behind new drywall on all exterior walls to improve energy efficiency. Relatively light-colored carpeting throughout would improve acoustics as well as increase light reflectance to negate the current "basement" atmosphere of the library.

d. Other areas

Most areas within the building would benefit from carpeting, painted drywall over concrete, acoustical ceilings and more uniform lighting, similar to the treatments described in a, b, and c above. A detailed breakdown of the specific finishes contemplated for each remodelled area of the building is contained within the Appendix to the Master Plan.

3. Exterior Remodelling

Recommendations were also prepared for a number of modifications to improve the exterior appearance of Mudd Hall. A brief description of the proposed modifications follows.

a. Repaint exterior sheet metal ducts

The large, exterior sheet metal heating and cooling ducts on Mudd Hall are currently bright green. These should be repainted to a gray color to make them less conspicuous. The recommended gray would be one that approximated the tone of a natural terne metal.

b. Courtyard and north entry paving

A considerable refinement of the exterior appearance of Mudd Hall could be effected by replacing the existing concrete courtyard paving with granite or brick, with granite the preferred choice. The warm tone of the Missouri Red granite that predominates on the campus would provide a very attractive counterpoint to the building's exterior walls if they remain concrete. If exterior walls are clad in granite, the granite pavers will integrate with that esthetic as well. Preliminary investigation indicated that the existing sloped concrete topping slab in the courtyard should be removed down to the waterproofing membrane. The old membrane should be removed as well. New, rigid insulation, a new elastomeric membrane and asphlatic protection courses should be installed before the new paving system is installed. This will improve energy performance, stop leaks and provide an attractive new walking surface.

The same paving material should be installed over concrete at the new north entry.

A lawn area with appropriate planting should be developed within the "L" of the new Administrative Offices area, as well as revised landscaping at the main campus-side entry to the courtyard.

c. Window treatment

The current exterior window areas have three problems that should be addressed in a renovation program. 1) Much of the glazed area consists of single pane glass in uninsulated steel frames. Preferably, these should be double-pane glass in insulated aluminum frames for improved energy performance. 2) Many of the operable casement windows have damaged operators as well as single-pane glass and inefficient gasketing systems. Convenience as well as energy performance would be improved by replacing these units with well-gasketed, double-pane glass and aluminum frames with crank operation. 3) All window frames are painted the same bright green as the HVAC ductwork. Preliminary investigation indicates that whatever frames are not replaced can be repainted by first removing the oxidation and then applying a specialized coating material in a more appropriate color. It should be noted, however, that testing would be necessary before it could be assured that the special coating would successfully adhere to the existing green vinyl coating on the window frames.

d. Exterior wall cladding

The Architects investigated the aesthetics of applying various facing materials to the concrete exterior walls. It was not possible to investigate the technical aspects of fastening and detailing exterior wall cladding under the scope of this project. From an aesthetic standpoint, it is recommended that the exterior walls might remain concrete, relying on painting of ductwork and window frames as well as granite paving and landscaping to effect a substantial improvement in overall appearance. The second option that appears favorable would be to clad essentially the entire building in red granite to match that of other buildings on campus. The Architects would not recommend a product such as stucco for exterior wall cladding from the standpoints of aesthetics or durability.

One very important factor in the consideration of how to treat Mudd Hall's exterior is that it is part of a complex with Elliot Hall. Any conclusive study of exterior treatment and its financing would have to include Elliot. Such a consideration is beyond the scope of the present study.

III. COST

Estimated construction costs for the Expansion Plan plus the additional renovation and remodelling proposals under consideration were prepared by the Architects. The following is a Summary of estimated costs; detailed breakdowns of all components of the estimate are presented in the Appendix to the Master Plan.

A. Summary of Estimated Costs

1. Final Expansion Plan (Additions and Renovations)	\$3,774,690
2. Compact Shelving Installation	255,000
3. Interior Remodelling (including upgrading of mechanical systems)	944,985
4. Repaint Exterior Sheet Metal Ducts	15,000
5. Exterior Granite Paving and Landscaping	446,205
6. Window Treatment (replace all single glazing)	208,007
7. Exterior Wall Cladding (Granite)	960,420
TOTAL	\$6,604,307

This is a January, 1983 figure. It does not include the cost of movable equipment, fees or additional contingency factor.